PN - JP2212527 A 19900823

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PR - JP19890031142 19890213

OPD - 1989-02-13

TI - PRODUCTION OF POROUS SEPARATING MEMBRANE

IN - MATSUMOTO YASUYO

PA - SUMITOMO ELECTRIC INDUSTRIES

IC - C08J9/36 ; C08L23/02 ; C08L27/12

TI - Prodn. of porous sepn. membrane - involves chemically etching high molecular film that is irradiated by high energy charged particles

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PA - (SUME) SUMITOMO ELECTRIC IND CO

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AB - J02212527 High molecular film is irradiated high energy charged particles, and irradiation damage is formed. After that, it is treated etching chemically to obtain porous membrane. Then hydrophilic monomer is graft polymerised to the porous membrane to produce porous sepn. membrane.
- The high molecular film consists of hydrophobic polymer such as polyethylene, polypropylene, ethylene-alpha-olefine copolymer, vinylidene polyfluoride, etc. The hydrophilic monomer is at least one monomer of acrylic acid, methacrylic acid, acryl amide, methacryl amide, N-vinyl pyrrolidone, N-vinyl pyridine, or 2-hydroxyethyl methacrylate. In the prodn., the porous membrane is irradiated electron rays and gamma-rays. After that, hydrophilic monomer is contacted to it. And graft polymerization is carried out.
- USE/ADVANTAGE - The porous sepn. membrane is used for a precise filtration membrane and a ultrafiltration membrane. Used for separating bacillus and virus in water system in the field of biotechnology. By using hydrophobic polymer film of big mechanical strength, homogeneous porous membrane of which pore dia. changes a little can be produced by etching method. By reforming the surface with hydrophilic monomer, porous membrane adapt well to water. (5pp Dwg.No. 0/0)

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IN - MATSUMOTO YASUYO

PA - SUMITOMO ELECTRIC IND LTD

TI - PRODUCTION OF POROUS SEPARATING MEMBRANE

AB - PURPOSE:To obtain a porous separating membrane having high mechanical strengths and a high separation efficiency by irradiating a polymer film comprising a hydrophobic polymer with high-energy charged particles to cause irradiation damages to the film, chemically etching this film and grafting a hydrophilic monomer onto the film.
- CONSTITUTION:A polymer film is irradiated with high-energy charged particles (>= 1MeV) substantially at right angles with respect to the film to give traces (irradiation damages) formed by the scission of the polymer chain on the film. As the polymer film, a hydrophobic polymer such as polyethylene, polypropylene, an ethylene/alpha-olefin copolymer or vinylidene fluoride is used. This film is chemically etched by immersion in an etchant (e.g. H 2SO4+K2Cr2O7), and a hydrophilic monomer

such as acrylic acid (desirably in a concentration of 10-80wt.%) is grafted onto the film to obtain a porous separating membrane useful as a fine filtration membrane or an ultrafiltration membrane.

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